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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/549,368

04/14/2000

Thomas J. Endres

1172

8245

7590

08/20/2004

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EXAMINER

CHANG, EDITH M

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 08/20/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/549,368

Applicant(s)

ENDRES ET AL.

Examiner

Edith M Chang

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2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10 and 13-20 is/are rejected.
- 7) ☒ Claim(s) 1, 11-12, 21-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper."

Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

The references listed in the last paragraph on page 3 to the second paragraph on page 4 of the specification are not listed in a separate Information Disclosure Statement for consideration, therefor they have not been considered.

2. The disclosure is objected to because of the following informalities: page 6 line 18, "Figures 6-8 is a flow chart diagram" should be "Figures 6-8 are flow chart diagrams".

Appropriate corrections are required.

Claim Objections

3. Claims 1-35 are objected to because of the following informalities:

Claim 1, the terms "decision feedback equalizer" are suggested changing to "feedback equalizer";

lines 13 & 15: "feedback equalizer in " is suggested changing to "feedback equalizer filter in";

Claim 2, the terms “decision feedback equalizer filter ” are suggested changing to “feedback equalizer filter”;

line 1: “said steps” is suggested changing to “the steps”;

line 2: “an individual sample by sample” is suggested changing to “the individual sample by sample”.

Claim 3, line 2: “a plane” is suggested changing to “a complex plane”;

line 3: “a first quality” is suggested changing to “said first quality”;

line 5: “a second quality” is suggested changing to “said second quality”.

Claim 4, line 3: “a first quality level” is suggested changing to “said first quality level”;

line 5: “a second quality level” is suggested changing to “said second quality level”;

Claim 11, lines 1, 9, 11, & 17: “decision feedback equalizer filter” is suggested changing to “feedback equalizer filter”;

lines 7-8: “a decision feedback equalizer filter arrangement” is suggested changing to “a decision feedback equalizer arrangement”;

line 9: “a first switch” is suggested changing to “a switch”;

lines 10-11, 13-14 & 15: “said first switch” is suggested changing to “said switch”.

Claim 12, line 1: “A communications receiver” is suggested changing to “A decision feedback equalizer arrangement”;

lines 2, 4 & 6: the terms “decision feedback equalizer” are suggested changing to “feedback equalizer”;

lines 4 & 6: "equalizer filer mode" " is suggested changing to "equalizer filter".

Claim 13 & 14, line 1: "A communications receiver" is suggested changing to "A decision feedback equalizer arrangement";

line 3: "a first quality" is suggested changing to "said first quality";

line 5: "at a second " is suggested changing to "at said second";

Claims 15-20, line 1: "A communications receiver" is suggested changing to "A decision feedback equalizer arrangement".

Claim 21, the terms "decision feedback equalizer" are suggested changing to "feedback equalizer";

lines 13 & 15, "feedback equalizer in" is suggested changing to "feedback equalizer filter in".

Claims 22-28, line 1: "A communication receiver" is suggested changing to "an apparatus".

Claims 22 & 25, lines 2 & 4: the terms "decision feedback equalizer" are suggested changing to "feedback equalizer".

Claim 28, "the terms "decision feedback equalizer" are suggested changing to "feedback equalizer".

Claims 29, 32 & 35, the terms "decision feedback equalizer" are suggested changing to "feedback equalizer".

Claims 5-10, 30-31 and 33-34 are directly or indirectly dependent on independent objected claims 1 and 21.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2-10, and 13-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, line 4-5: “said steps ” does not clearly indicate that what steps in claim 1 are the “said steps”.

Claims 3 & 4, lines 3-4: “when outside a box of width w , said box of width w being centered about the origin” is not clear that what is the width of a box, how a box of width w being centered about the origin in the constellation complex *plane*, and what is outside the box;

lines 5-6: “when inside said box of width w ” does not clearly indicate what is inside the box being centered about the origin of the complex plane.

Claim 4, line 6: “the least means square” lacks antecedent basis.

Claim 6, “a reliability area comprising a box in said complex plane” is not clear that how a reliability area comprises a box in the complex plane.

Claim 7, line 1: “the width w of said box” does not clearly indicate the invention;

line 2: “past signal samples” lacks antecedent basis.

Claim 8, line 2: “past signal samples” lacks antecedent basis.

Claim 9, line 2: “the constant modulus” lacks antecedent basis.

Claim 10, line 2: “the least means squared” lacks antecedent basis.

Claims 13 & 14, line 4: “when outside a box of width w , said box of width w being centered about the origin” is not clear that what is the width of a box, how a box of width w being centered about the origin in the constellation complex *plane*, and what is outside the box;

line 6: “when inside said box of width w ” does not clearly indicate what is inside the box being centered about the origin of the complex plane.

Claim 16, lines 2-3: “a box in said complex plane” does not clearly indicate the invention.

Claim 17, line 2: “the width w of said box” does not clearly indicate the invention;

line 3: “past signal samples” lacks antecedent basis.

Claim 18, lines 2-3: “past signal samples” lacks antecedent basis.

Claim 19, line 3: “the constant modulus algorithm” lacks antecedent basis.

Claim 20, line 3: “the least means squared algorithm” lacks antecedent basis.

Claims 5 and 15 are directly or indirectly dependent on the rejected claims 2 and 14.

Allowable Subject Matter

6. Claims 2-10, and 13-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

7. Claims 1, 11, and 21 are objected to informality, but would be allowable if rewritten to overcome the objections.

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8. Claims 12, 22-31 and 32-35 are objected as being dependent upon objected base claims, but would be allowable if the objected base claims overcome the objections.

9. The following is an examiner's statement of reasons for allowance:

Claims are allowable over prior art of record because the prior art of record does not teach or suggest, alone or in a combination, among other things, at least a method or apparatus for operating the feedback equalizer filter as a whole, the combination of elements and features as claimed, which includes switching from said second mode to said first mode responsive to a first individual signal sample; and switching back from said first mode to said second mode responsive to a second individual signal sample, whereby the feedback equalizer filter is switched between said first and second modes on an individual sample by sample basis.

Conclusion

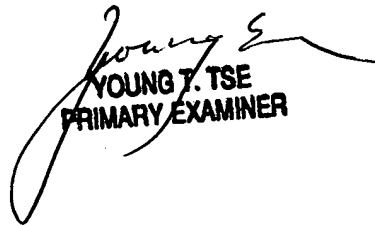
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
August 11, 2004


YOUNG T. TSE
PRIMARY EXAMINER